

Thursday, 1/17/2008 3:31:31 PM  
Kim Johnston

## Process Sheet

Customer : CU-DAR001 Dart Helicopters Services Drawing Name : AFT TUBE ASSEMBLY  
 Job Number : 36843  
 Estimate Number : 10699  
 P.O. Number :  
 This Issue : 1/17/2008 S.O. No. :  
 Prsht Rev. : NC Part Number : D3391025  
 First Issue : / / Type : LANDING GEAR Drawing Number : D3391 REV G  
 Drawing Revision : G  
 Previous Run : 36842 Material :  
 Due Date : 1/15/2008 Qty: 1 Um: Each  
 Written By : JD 08 01 18  
 Checked & Approved By :  
 Comment : Est Rev B 06-02-07 ECN773 dwg rev. D EC  
 Est Rev:C 06-03-28 Update Manuf. Instructions JLM  
 est rev D 07.03.20 revF dwg EC  
 est rev E 07.11.07 rev G dwg ecn 1053p EC verified  
 by: DD  
 Est Rev:F 07-11-13 ECN 1056 DD verified by: EC

## Additional Product

Job Number:



Seq. #: Machine Or Operation: Description :

1.0 D6014090 ALUMINUM EXTRUSION



Comment: Qty.: 1.0000 f(s)/Unit Total : 1.0000 f(s)

ALUMINUM EXTRUSION

Pick:

Qty	Part Number	Description	Batch
1	D6014-090	Extrusion	26546

Identify as D3391-3

20 08/01/20

2.0 MORI SEIKI MORI SEIKI CNC LATHE LARGE



Comment: MORI SEIKI CNC LATHE LARGE

Turn as per Folio FA599 Rev: G & Dwg D3391 Rev: G

3.0 QC2 INSPECT PARTS AS THEY COME OFF MACHINE



Comment: INSPECT PARTS AS THEY COME OFF MACHINE

20 08/01/20 0

4.0 HAAS1 HAAS CNC VERTICAL MACHINING #1



Comment: HAAS

1-Machine as per Folio FA 599 Rev: G & Dwg D3391 Rev: G

2-Deburr

SA 08/02/20

W/O:		WORK ORDER CHANGES					
DATE	STEP	PROCEDURE CHANGE	By	Date	Qty	Approval Chief Eng / Prod Mgr	Approval QC Inspector

Part No: \_\_\_\_\_ PAR #: \_\_\_\_\_ Fault Category: \_\_\_\_\_ NCR: Yes No DQA: \_\_\_\_\_ Date: \_\_\_\_\_

QA: N/C Closed: \_\_\_\_\_ Date: \_\_\_\_\_

NCR:		WORK ORDER NON-CONFORMANCE (NCR)						
DATE	STEP	Description of NC Section A	Corrective Action Section B			Verification Section C	Approval Chief Eng	Approval QC Inspector
			Initial Chief Eng	Action Description Chief Eng	Sign & Date			

NOTE: Date & initial all entries

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Job Number: 36843

Part Number: D3391025

Job Number:



Seq. #:

Machine Or Operation:

Description:

5.0

QC2

INSPECT PARTS AS THEY COME OFF MACHINE



Comment: INSPECT PARTS AS THEY COME OFF MACHINE

SA 08/02/25 ①

6.0

QC8

SECOND CHECK



Comment: SECOND CHECK

08-02-25 ①

7.0

LANDING GEAR 1

LANDING GEAR RESOURCE 1



Comment: LANDING GEAR RESOURCE 1

1-Drill (PILOT HOLE) aft cap holes per Dwg D3391 using DT8803

TURN OVER EL 8-2-26

8.0

BENDING

BENDING MACHINE



Comment: NC Bender

Form as per Dwg D3391 Using Bend Prog 3391025

EL 8-2-26

9.0

QC5

INSPECT WORK TO CURRENT STEP



Comment: INSPECT WORK TO CURRENT STEP

DP 8-2-26

10.0

LANDING GEAR 1

LANDING GEAR RESOURCE 1



Comment: LANDING GEAR RESOURCE 1

1-Open Aft cap pilot hole to .208" as per Dwg D3391

2-Drill float bag holes using DT8809 as per Dwg D3391(Holes marked "A" Only.

3-Drill wearplate holes as per Dwg D3391 using DT8878(Mid Tube) & DT8217 Wearplate Jig.

\*\*\*\*\*Do Not Open To Finished Size\*\*\*\*\*

4-Drill Wearshoe holes as per DWG D3391 using DT8939 locating from 2 previously drilled aft wearplate holes.

5-Open wearplate holes to 0.250" and c'sink as per dwg D3391

6-Open up all wearshoe, wearplate and float bag holes as per Dwg D3391.

7-Deburr

Tools: mill

DP 8-2-26

Dart Aerospace Ltd

W/O:		WORK ORDER CHANGES						
DATE	STEP	PROCEDURE CHANGE	By	Date	Qty	Approval Chief Eng / Prod Mgr	Approval QC Inspector	

Part No: D3391-025 PAR: NIA Fault Category: Red Landing Gear NCR: ☒ Yes No DQA: 1D Date: 08/03/00  
QA: N/C Closed: HA Date: 08/03/24

NCR: <u>36843</u>		WORK ORDER NON-CONFORMANCE (NCR)						
DATE	STEP	Description of NC Section A	Corrective Action Section B			Verification Section C	Approval Chief Eng	Approval QC Inspector
			Initial Chief Eng	Action Description Chief Eng	Sign & Date			
03.02.25	7	DUE TO EDGE FINDER, HOLE OF $\phi 0.250 \times 0.035$ " DEEP 4.15" FROM FRONT END IS ON TUBE	PA PER QSI 042 03.02.25	OPEN HOLE TO $\phi 0.250$ THRU TUBE. DRILL MATCHING $\phi 0.250$ THRU HOLE ON OTHER SIDE FOR UNIFORMITY	PA PER QSI 042 03.02.25	8-226	PA PER QSI 042 03.02.25	080226
08.	8	Height of aft tube end is 4.75" Normal is $4.2" \pm 0.25"$	PA PER QSI 042 03.02.26	ACCEPTABLE DEVIATION DEVIATION WILL INTRODUCE LESS BENDING MOMENT	PA PER QSI 042 03.02.26	080226	PA PER QSI 042 03.02.05	080226

NOTE: Date & initial all entries

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Job Number: 36843

Part Number: D3391025

Job Number:



Seq. #:

Machine Or Operation:

Description :

11.0

QC5

INSPECT WORK TO CURRENT STEP



Comment: INSPECT WORK TO CURRENT STEP

*Power 270*

12.0

HAND FINISHING1

HAND FINISHING RESOURCE #1



Comment: HAND FINISHING RESOURCE #1

Acid etch and Alodine as per QSI 005 4.1

*M-1*

*08/02/27*

*(IX)*

13.0

QC3

INSPECT POWDER COAT/CHEMICAL CONVERSION



Comment: INSPECT POWDER COAT/CHEMICAL CONVERSION

*5 08/02/03*

14.0

D36704200

SPACER



Comment: Qty: 4.0000 Each(s)/Unit Total: 4.0000 Each(s)

SPACER

batch:

*35938*

*DP*

*8-3-4*

15.0

LANDING GEAR 1

LANDING GEAR RESOURCE 1



Comment: LANDING GEAR RESOURCE 1

Instal spacers as per dwg D3391

A/R Magnabond 6398 Batch: *M105379*

exp. date: *8-5-30*

cure time 12hrs as per QSI0015

*DP*

*8-3-4*

16.0

QC5

INSPECT WORK TO CURRENT STEP



Comment: INSPECT WORK TO CURRENT STEP

*5 08/03/13*

17.0

POWDER COATING

POWDER COATING



Comment: POWDER COATING

Powder Coat White Gloss (Ref: 4.3.5.1) as per QSI 005 4.3

*M107005*

*FX*

*08/03/13*

18.0

QC3

INSPECT POWDER COAT/CHEMICAL CONVERSION



Comment: INSPECT POWDER COAT/CHEMICAL CONVERSION

*08-03-13*

*(XC)*

W/O:		WORK ORDER CHANGES					
DATE	STEP	PROCEDURE CHANGE	By	Date	Qty	Approval Chief Eng / Prod Mgr	Approval QC Inspector

Part No: \_\_\_\_\_ PAR #: \_\_\_\_\_ Fault Category: \_\_\_\_\_ NCR: Yes No DQA: \_\_\_\_\_ Date: \_\_\_\_\_

QA: N/C Closed: \_\_\_\_\_ Date: \_\_\_\_\_

NCR:		WORK ORDER NON-CONFORMANCE (NCR)						
DATE	STEP	Description of NC Section A	Corrective Action Section B			Verification Section C	Approval Chief Eng	Approval QC Inspector
			Initial Chief Eng	Action Description Chief Eng	Sign & Date			

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Job Number: 36843

Part Number: D3391025

Job Number:



Seq. #:

Machine Or Operation:

Description :

19.0

D2646

Aft Cap



Comment: Qty.: 1.0000 Each(s)/Unit Total : 1.0000 Each(s)

Aft Cap

Pick:

Qty Part Number Description Batch  
1 D2646 Aft Cap

B36184

91

20.0

D35371

WEARPAD



Comment: Qty.: 1.0000 Each(s)/Unit Total : 1.0000 Each(s)

WEARPAD

B36714

91

21.0

D35377

Wearpad



Comment: Qty.: 1.0000 Each(s)/Unit Total : 1.0000 Each(s)

Wearpad

B33869

91

22.0

D35531

Gasket



Comment: Qty.: 1.0000 Each(s)/Unit Total : 1.0000 Each(s)

Gasket

B31630

MR

23.0

D35533

Gasket



Comment: Qty.: 1.0000 Each(s)/Unit Total : 1.0000 Each(s)

Gasket

B32745

91

24.0

D36721

PHENOLIC WASHER



Comment: Qty.: 2.0000 Each(s)/Unit Total : 2.0000 Each(s)

PHENOLIC WASHER

B34470

91

25.0

ALS41032130

Insert



Comment: Qty.: 14.0000 Each(s)/Unit Total : 14.0000 Each(s)

INSERT

batch: 1A100480

or equivalent per

QSI 017

91

08-03-13

(X)

**Dart Aerospace Ltd**

W/O:		WORK ORDER CHANGES					
DATE	STEP	PROCEDURE CHANGE	By	Date	Qty	Approval Chief Eng / Prod Mgr	Approval QC Inspector

Part No: \_\_\_\_\_ PAR #: \_\_\_\_\_ Fault Category: \_\_\_\_\_ NCR: Yes No DQA: \_\_\_\_\_ Date: \_\_\_\_\_

QA: N/C Closed: \_\_\_\_\_ Date: \_\_\_\_\_

NCR:		WORK ORDER NON-CONFORMANCE (NCR)						
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**NOTE:** Date & initial all entries



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Drawing Name: AFT TUBE ASSEMBLY

Job Number: 36843

Part Number: D3391025

Job Number:



Seq. #:

Machine Or Operation:

Description :

26.0

ALS41032225

Insert



Comment: Qty.: 12.0000 Each(s)/Unit Total : 12.0000 Each(s)

INSERT

or equivalent

Per QSI 017

M100489 Y1

27.0

AN3C4A

BOLT



Comment: Qty.: 6.0000 Each(s)/Unit Total : 6.0000 Each(s)

Bolt

Pick:

Qty Part Number Description Batch

2 AN3C4A Bolt M107008 Y1

28.0

AN3C5A

Bolt



Comment: Qty.: 4.0000 Each(s)/Unit Total : 4.0000 Each(s)

Bolt

M106780 Y1

29.0

AN960C10L

washer



Comment: Qty.: 10.0000 Each(s)/Unit Total : 10.0000 Each(s)

Inventory

Pick:

Qty Part Number Description Batch

2 AN960C10L Washer M107242

30.0

HAND FINISHING1

HAND FINISHING RESOURCE #1



Comment: SMALL & MEDIUM FAB RESOURCE 1

1-Install inserts as per Dwg D3391

2-Install Aft Cap as per Dwg D3391

A/R Sikaflex-241/-291 M105585

Sikaflex expiry date: 08-07

Y1 08-03-13 20

31.0

QC5

INSPECT WORK TO CURRENT STEP



Comment: INSPECT WORK TO CURRENT STEP

08/03/13 20

**Dart Aerospace Ltd**

W/O:		WORK ORDER CHANGES					
DATE	STEP	PROCEDURE CHANGE	By	Date	Qty	Approval Chief Eng / Prod Mgr	Approval QC Inspector

Part No: \_\_\_\_\_ PAR #: \_\_\_\_\_ Fault Category: \_\_\_\_\_ NCR: Yes No DQA: \_\_\_\_\_ Date: \_\_\_\_\_

QA: N/C Closed: \_\_\_\_\_ Date: \_\_\_\_\_

NCR:		WORK ORDER NON-CONFORMANCE (NCR)						
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			Initial Chief Eng	Action Description Chief Eng	Sign & Date			

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Drawing Name: AFT TUBE ASSEMBLY

Job Number: 36843

Part Number: D3391025

Job Number:



Seq. #:

Machine Or Operation:

Description :

32.0

PACKAGING 1

PACKAGING RESOURCE #1



Comment: PACKAGING RESOURCE #1

Identify and Stock

Location: *PP 37504*

*8/3/20*

*SP*

*(1x)*

33.0

QC21

FINAL INSPECTION/W/O RELEASE



Comment: FINAL INSPECTION/W/O RELEASE

*1208/03/00*

Job Completion



*IL 08-03-20*

W/O:		WORK ORDER CHANGES					
DATE	STEP	PROCEDURE CHANGE	By	Date	Qty	Approval Chief Eng / Prod Mgr	Approval QC Inspector

Part No: \_\_\_\_\_ PAR #: \_\_\_\_\_ Fault Category: \_\_\_\_\_ NCR: Yes No DQA: \_\_\_\_\_ Date: \_\_\_\_\_

QA: N/C Closed: \_\_\_\_\_ Date: \_\_\_\_\_

NCR:		WORK ORDER NON-CONFORMANCE (NCR)						
DATE	STEP	Description of NC Section A	Corrective Action Section B			Verification Section C	Approval Chief Eng	Approval QC Inspector
			Initial Chief Eng	Action Description Chief Eng	Sign & Date			

NOTE: Date & initial all entries

<b>DART AEROSPACE LTD</b>		<b>Work Order:</b> 36843
<b>Description:</b> Float Skidtube (412)		<b>Part Number:</b> D3391-3
<b>Inspection Dwg:</b> D3391	<b>Rev:</b> G	<b>Page 1 of 1</b>

### FIRST ARTICLE INSPECTION CHECKLIST

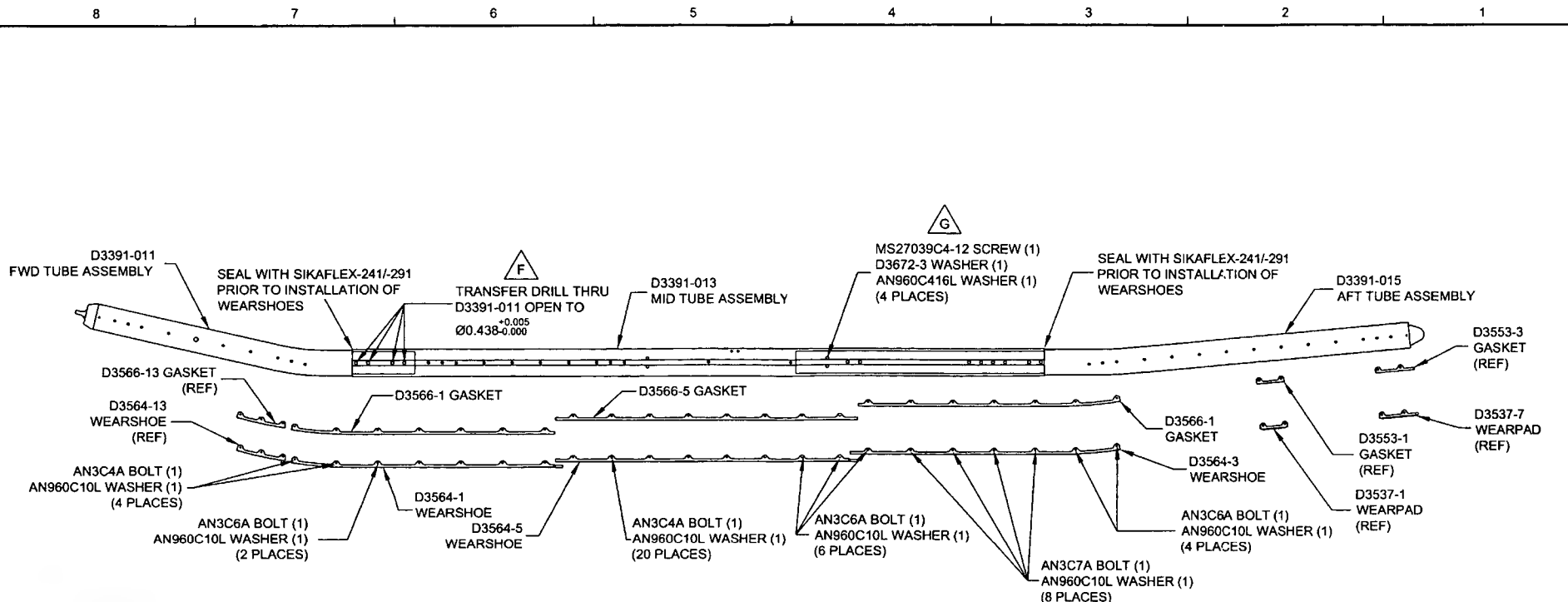
☒ First Article ☐ Prototype

Drawing Dimension	Tolerance	Actual Dimension	Accept	Reject	Method of Inspection	Comments
14.000	+/-0.010	14.000	/			
3.500	+/-0.010	3.501	/			
88.93	+/-0.030	88.937	/			
44.995	+/-0.030	44.995	/			
3.200	+/-0.010	3.205	/			
1.526	+0.000/-0.030	1.524	/			
0.200	+/-0.010	.205	/			
7.500	+/-0.010	7.500	/			
27.750	+/-0.010	27.750	/			
31.750	+/-0.010	31.750	/			
35.250	+/-0.010	35.250	/			
3.300	+/-0.010	3.298	/			
0.200	+/-0.010	.201	/			
3.520	+/-0.010	3.515	/			
0.687	+0.010/-0.000	.690	/			
R0.062	+/-0.010	R.062	/			
Ø0.484	+0.005/-0.001	Ø.488	/			

<b>Measured by:</b> 20 / SA	<b>Audited by:</b> [Signature]	<b>Prototype Approval:</b>	N/A
<b>Date:</b> 08/01/2008 / 08/02/09	<b>Date:</b> 02-03-14	<b>Date:</b>	N/A

Rev	Date	Change	Revised by	Approved
A	06.04.24	New Issue P/O D3391-025	KJ/JLM	
B	06.06.19	Dwg revision update	KJ/JLM	
C	07.04.20	Ø0.208 dimension removed	KJ/JLM	
D	07.09.06	0.400 dimension removed	KJ/JLM	
E	07.11.23	Dwg Rev. updated	KJ/EC/DD	[Signature]





**D3391-041 ASSEMBLY**

**RELEASED**  
07-11-06

**D3391-041 FLOAT SKIDTUBE ASSEMBLY PARTS LIST**

QTY	PART NUMBER	DESCRIPTION
X	D3391-041	FLOAT SKIDTUBE ASSEMBLY
1	D3391-011	FWD TUBE ASSEMBLY
1	D3391-013	MID TUBE ASSEMBLY
1	D3391-015	AFT TUBE ASSEMBLY
1	D3564-1	WEARSHOE
1	D3564-3	WEARSHOE
1	D3564-5	WEARSHOE
2	D3566-1	GASKET
4	D3672-3	WASHER
24	AN3C4A	BOLT
12	AN3C6A	BOLT
8	AN3C7A	BOLT
44	AN960C10L	WASHER
4	MS27039C4-12	SCREW
4	AN960C416L	WASHER

**GENERAL NOTES**

- 1) FINISH: CHEMICAL CONVERSION COAT PER DART QSI 005 4.1  
POWDER COAT WHITE (4.3.5.1) PER DART QSI 005 4.3
- 2) SPRAY INSIDE OF TUBE WITH A COAT OF LPS LABORATORIES "LPS-3" AFTER FINISH  
AND AFTER INSTALLATION OF INSERTS. COAT ALL EXPOSED FASTENERS WITH  
LPS LABORATORIES "LPS PROCYON" AFTER FINAL ASSEMBLY, CLEAN EXCESS  
OFF POWDER COATING WITH MEK DEGREASER.  
TOLERANCES: PER DART QSI 018 UNLESS OTHERWISE NOTED  
UNITS: INCHES UNLESS OTHERWISE NOTED
- 3) USE DART DRILL TEMPLATE DT8217 TO LOCATE AND DRILL Ø0.297 SIZE HOLES  
FOR WEARSHOE INSERTS. C'BORE AS NOTED AND INSTALL INSERTS EXCEPT  
WHERE INDICATED.
- 4) RETURN TO
- 5) COPY

G	REPLACE NAS INSERTS W/ AELS INSERTS SWITCH TO D3670-XXXX SPACERS FOR INSTALLING FLOAT BAGS, DWG REORGANIZED FOR CLARITY	DC	07.07.31
F	ADD SS WEARSHOE, GASKET REMOVE FWJ SADDLE HOLE -011/-021	PH	07.01.18
E	CHANGE TOLERANCE, EASE MANUFACTURE	PH	06.04.25
D	UPDATE TOLERANCE, CHANGE HOLE SIZE	PH	06.01.23
C	LENGTHEN AFT EXTENSION	PH	05.09.27
B	DRAWING UPDATES	PH	05.06.10
A	NEW ISSUE	PH	05.02.07
REV.	DESCRIPTION	BY	DATE
DESIGN			
DRAWN			
CHECKED			
MFG. APPR.			
APPROVED			
DE APPR.			
DATE	07.07.31		

**DART AEROSPACE USA, INC**  
PORT HADLOCK, WA

DRAWING NO. D3391  
REV. G  
SHEET 1 OF 8

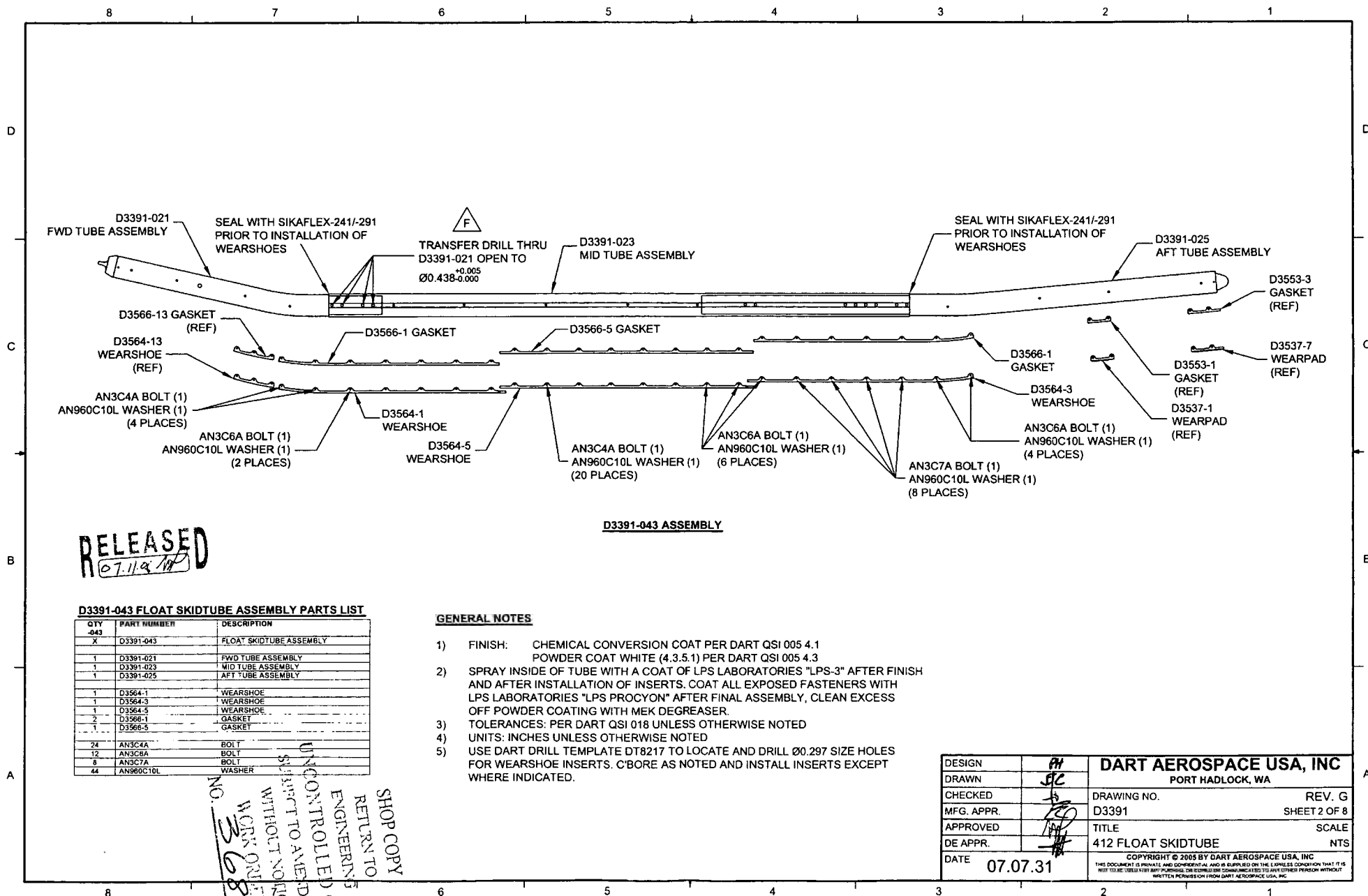
TITLE 412 FLOAT SKIDTUBE  
SCALE NTS

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WITH OUT NOTICE  
NO. 108473







**D3391-043 ASSEMBLY**

**RELEASED**  
07.11.91

**D3391-043 FLOAT SKIDTUBE ASSEMBLY PARTS LIST**

QTY	PART NUMBER	DESCRIPTION
X	D3391-043	FLOAT SKIDTUBE ASSEMBLY
1	D3391-021	FWD TUBE ASSEMBLY
1	D3391-023	MID TUBE ASSEMBLY
1	D3391-025	AFT TUBE ASSEMBLY
1	D3564-1	WEARSHOE
1	D3564-3	WEARSHOE
1	D3564-5	WEARSHOE
2	D3566-1	GASKET
1	D3566-5	GASKET
24	AN3C4A	BOLT
12	AN3C6A	BOLT
8	AN3C7A	BOLT
44	AN960C10L	WASHER

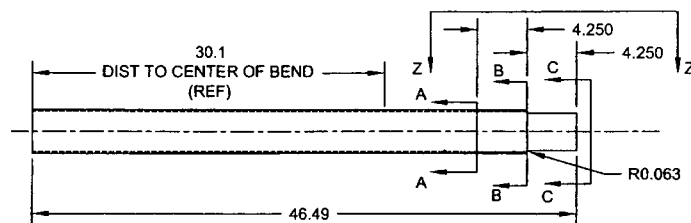
**GENERAL NOTES**

- 1) FINISH: CHEMICAL CONVERSION COAT PER DART QSI 005 4.1  
POWDER COAT WHITE (4.3.5.1) PER DART QSI 005 4.3
- 2) SPRAY INSIDE OF TUBE WITH A COAT OF LPS LABORATORIES "LPS-3" AFTER FINISH  
AND AFTER INSTALLATION OF INSERTS. COAT ALL EXPOSED FASTENERS WITH  
LPS LABORATORIES "LPS PROCYON" AFTER FINAL ASSEMBLY, CLEAN EXCESS  
OFF POWDER COATING WITH MEK DEGREASER.
- 3) TOLERANCES: PER DART QSI 018 UNLESS OTHERWISE NOTED
- 4) UNITS: INCHES UNLESS OTHERWISE NOTED
- 5) USE DART DRILL TEMPLATE DT8217 TO LOCATE AND DRILL Ø0.297 SIZE HOLES  
FOR WEARSHOE INSERTS. C'BORE AS NOTED AND INSTALL INSERTS EXCEPT  
WHERE INDICATED.

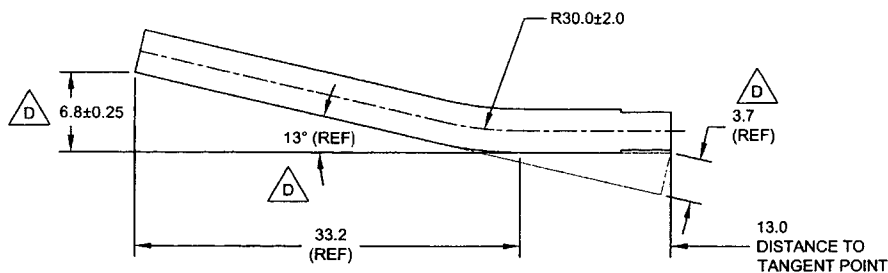
DESIGN	PH	<b>DART AEROSPACE USA, INC</b>
DRAWN	JFC	PORT HADLOCK, WA
CHECKED	JB	DRAWING NO. REV. G
MFG. APPR.	FE	D3391 SHEET 2 OF 8
APPROVED	PH	TITLE SCALE
DE APPR.	PH	412 FLOAT SKIDTUBE NTS
DATE	07.07.31	COPYRIGHT © 2005 BY DART AEROSPACE USA, INC

SHOP COPY  
RETURN TO  
ENGINEERING  
UNCONTROLLED COPY  
SUBJECT TO AMENDMENT  
WITHOUT NOTICE  
WORK ORDER  
NO. 36843

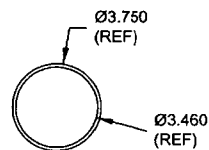




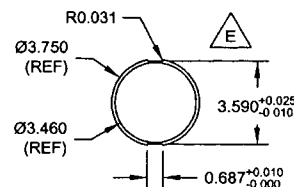
**D3391-1 CUTTING DETAIL**  
(MAKE FROM D6013-047 SKIDTUBE MATERIAL)



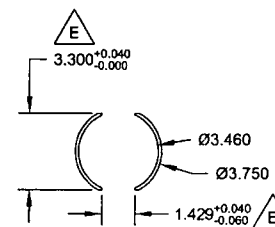
**D3391-011/-021 BENDING DETAIL**  
(MAKE FROM D3391-1)



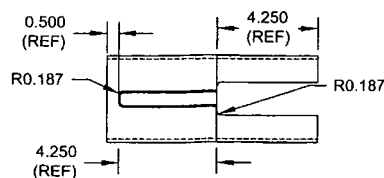
**SECTION A-A**  
(SCALE 1:5)



**SECTION B-B**  
(SCALE 1:5)



**SECTION C-C**  
(SCALE 1:5)



**VIEW Z-Z**  
(SCALE 1:5)

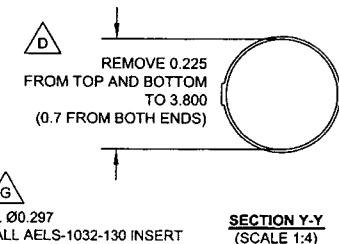
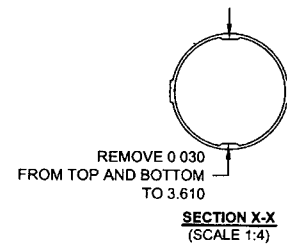
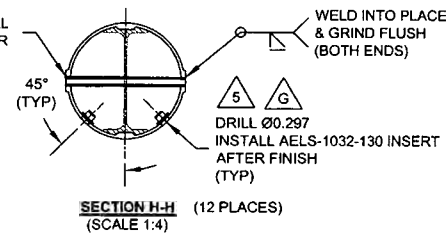
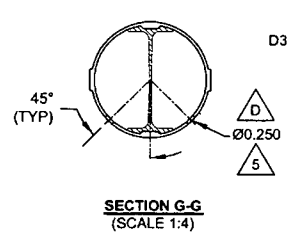
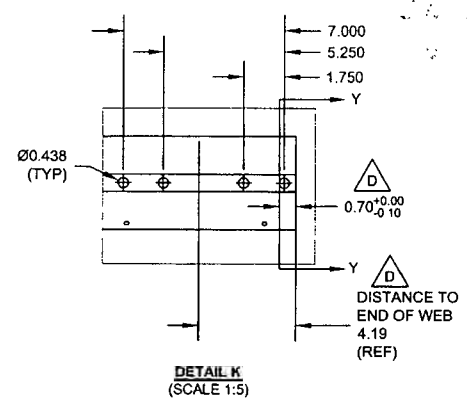
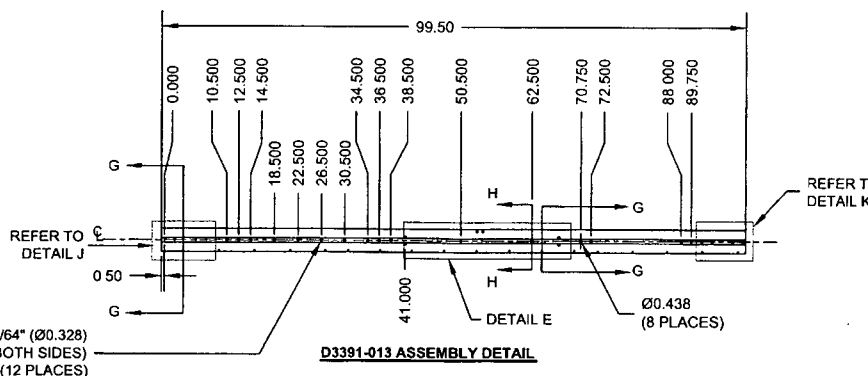
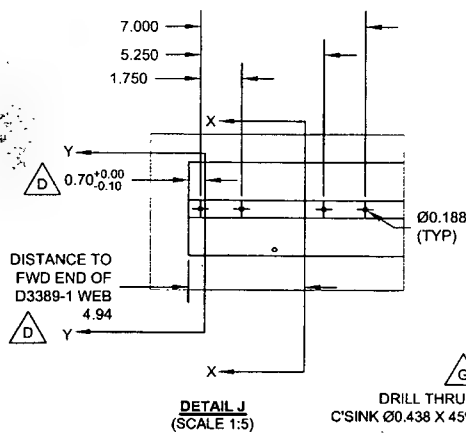
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DESIGN		<b>DART AEROSPACE USA, INC</b>	
DRAWN	JP	PORT HADLOCK, WA	
CHECKED	JP	DRAWING NO.	REV. G
MFG. APPR.	JP	D3391	SHEET 3 OF 8
APPROVED	JP	TITLE	SCALE
DE APPR.	JP	412 FLOAT SKIDTUBE	1:10
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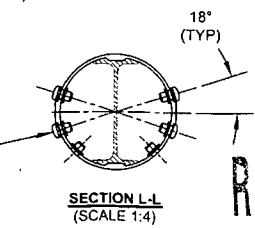
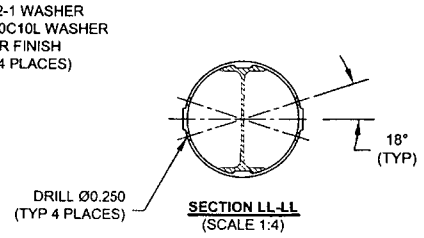
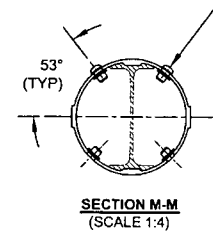
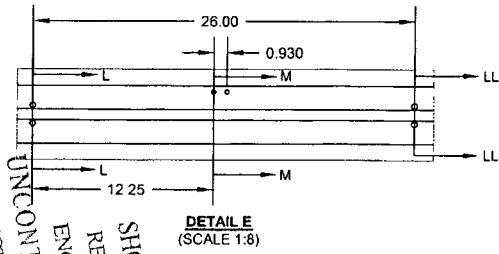






**D3391-013 MID TUBE ASSEMBLY PARTS LIST**

QTY -013	PART NUMBER	DESCRIPTION
X	D3391-013	MID TUBE ASSEMBLY
1	D2500-1-100	EXTRUSION
1	D3389-1	WEB
12	D3681-1	SPACER
4	D3672-1	WASHER
4	D3672-3	WASHER
24	AELS-1032-130	INSERT
4	ALS4-428-165	INSERT
4	AN960C10L	WASHER
4	AN960C416L	WASHER
4	MS27039C1-09	SCREW
4	MS27039C4-08	SCREW

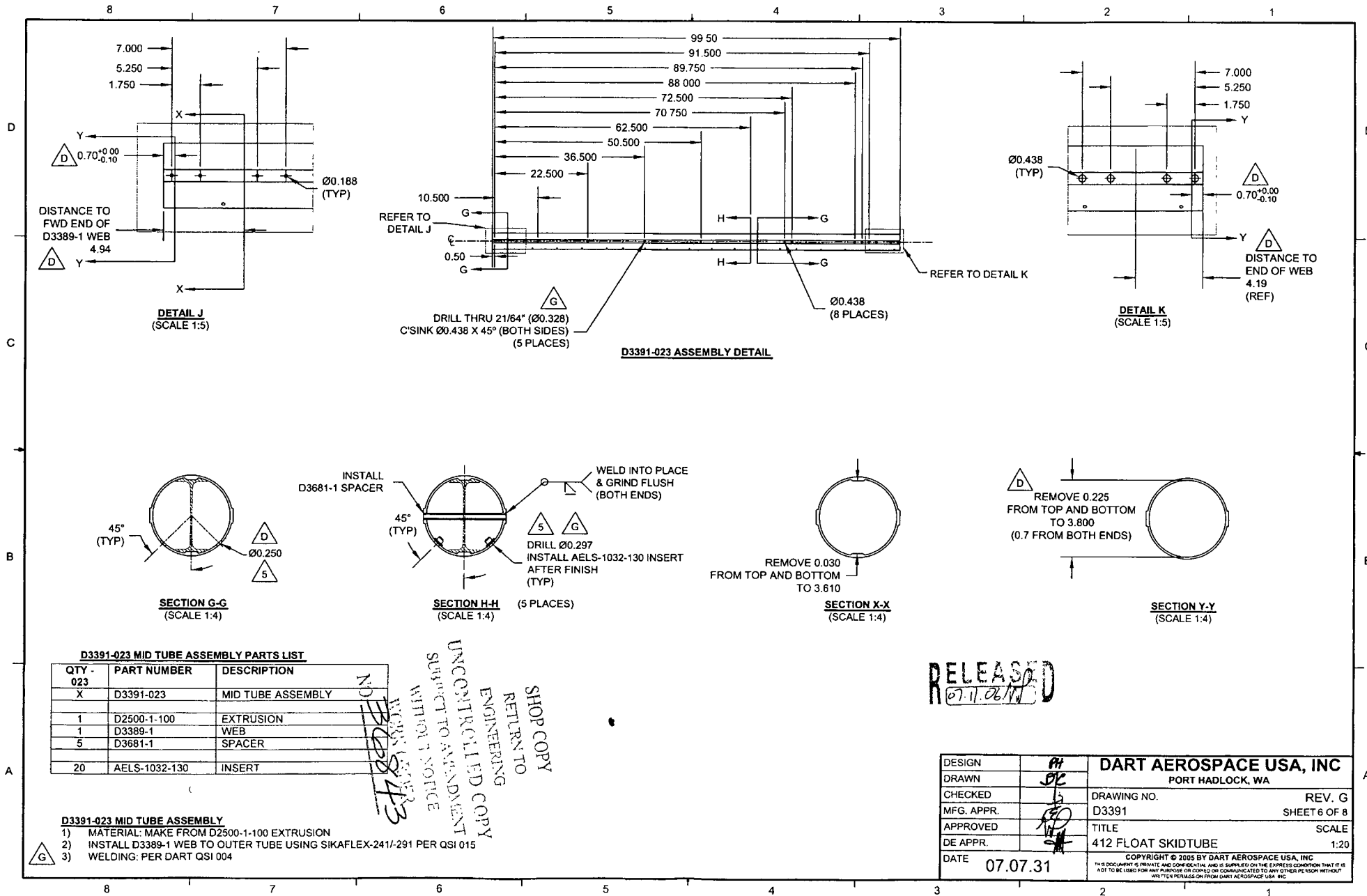


- D3391-013 MID TUBE ASSEMBLY**
- MATERIAL: MAKE FROM D2500-1-100 EXTRUSION
  - INSTALL D3389-1 WEB TO OUTER TUBE USING SIKAFLEX-241/291 PER QSI 015
  - WELDING: PER DART QSI 004

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CHECKED		DRAWING NO	REV. G
MFG. APPR.		D3391	SHEET 5 OF 8
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DE APPR.		412 FLOAT SKIDTUBE	1:20
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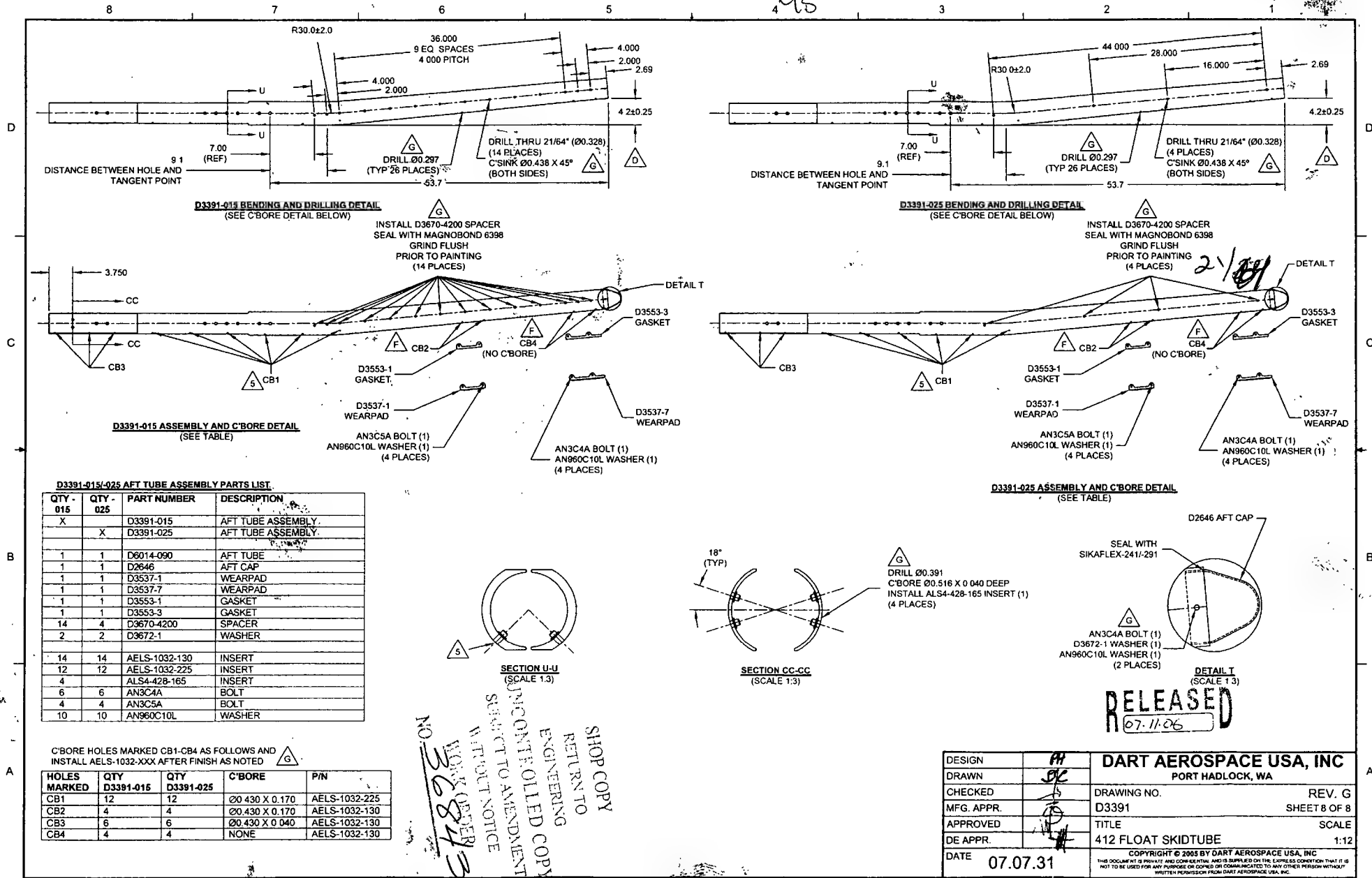






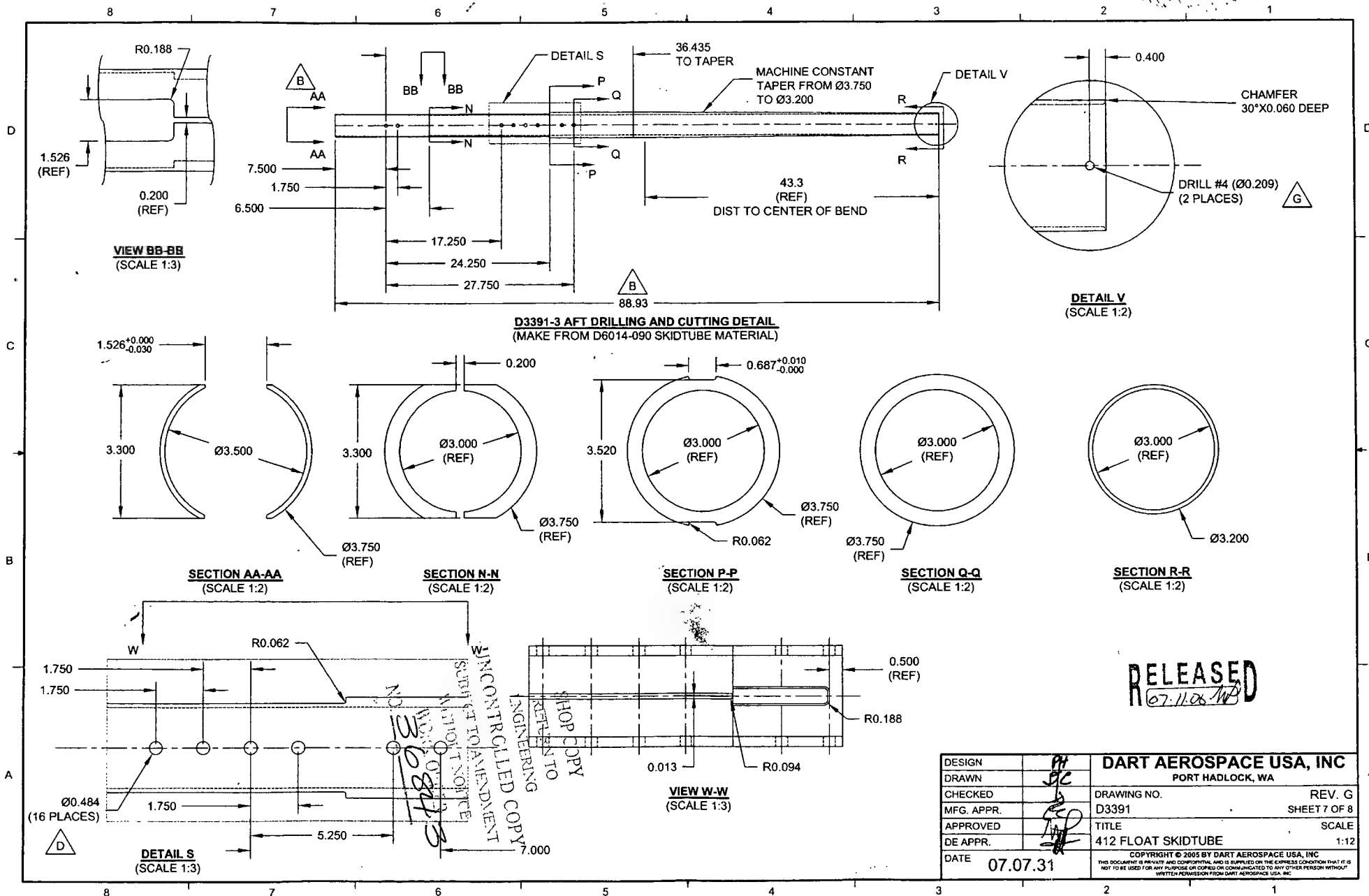


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## Peter Hum

---

**From:** David Shepherd [dshepherd@dartaero.com]  
**Sent:** February 24, 2008 11:33 PM  
**To:** 'Peter Hum'  
**Cc:** 'Provencal, Chris'  
**Subject:** RE: Deviation on D3391-025 aft tube - tri-beam

Sorry Peter ... I misunderstood which end I was looking at it the first time.  
So ... your suggestion sounds good to me.

David

---

**From:** Peter Hum [mailto:phum@dartaero.com]  
**Sent:** Friday, February 22, 2008 7:24 AM  
**To:** 'David Shepherd'  
**Cc:** 'Chris Provencal'  
**Subject:** RE: Deviation on D3391-025 aft tube - tri-beam

David,

Please see the attached picture. The deviation is on the forward most end of the tube, indicated by the red circle.  
The deviation is 4.15" from the front end of the skidtube.

As you can see the set of saddle holes is on the left side of the tube.

Peter

---

**From:** David Shepherd [mailto:dshepherd@dartaero.com]  
**Sent:** February 22, 2008 3:35 AM  
**To:** 'Peter Hum'  
**Cc:** 'Provencal, Chris'  
**Subject:** RE: Deviation on D3391-025 aft tube - tri-beam

Peter,

Your suggestion sounds good.

But before I approve it, can you send me a sketch that shows where these holes will be in relation to the rest of the holes in the tube?

I don't think all the holes are in the tube shown in the photos.  
I think there are some saddle holes missing?

I don't think the customer needs any paperwork for this modification.

David

---

**From:** Peter Hum [mailto:phum@dartaero.com]  
**Sent:** Tuesday, February 19, 2008 1:19 PM  
**To:** 'David Shepherd'  
**Cc:** 'Chris Provencal'  
**Subject:** Deviation on D3391-025 aft tube - tri-beam

25/02/2008

David,

Production is making a D3391-025 aft tube. Upon manufacture, the edge finder moved into the tube wall making a hole 0.200" diameter by 0.035" deep. See the attached pictures. This is only on one side of the aft tube.

Notes about this deviation:

- a) This is in an area fwd of the fwd most ground handling holes (not very high stress)
- b) On the same plane as the ground handling holes. Therefore, minimal impact in bending.
- c) Part is completely machined with taper, holes, and slot. Going to bending next. Therefore, there has been some \$\$ in this already.

Possible solution that ChrisP and I thought of:

- a) Drill out hole to 0.250" diameter
- b) Make matching concentric hole on other side for uniformity.
- c) This section of the aft tube is well into the aft end and won't be noticeable by the customer/user.

Is this deviation acceptable? (I see no structural implications of the possible solution). Probably more cosmetic

I realize that ChrisP or I could probably approve this, however my question is do we need to have any additional paperwork to send to the customer indicating the above deviation?

Thanks,  
Peter Hum  
Mechanical Designer  
Dart Aerospace Ltd.  
1270 Aberdeen St.  
Hawkesbury, ONT, K6A 1K7  
Tel: (613) 632-5200  
Fax: (613) 632-9311

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Version: 7.5.516 / Virus Database: 269.20.5/1278 - Release Date: 2/14/2008 10:28 AM

Internal Virus Database is out-of-date.

Checked by AVG Free Edition.

Version: 7.5.516 / Virus Database: 269.20.5/1278 - Release Date: 2/14/2008 10:28 AM

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25/02/2008

